

Method and system for managing a distributed trust path locally for public key certificates  
relating to the trust path of an X.509 attribute certificate

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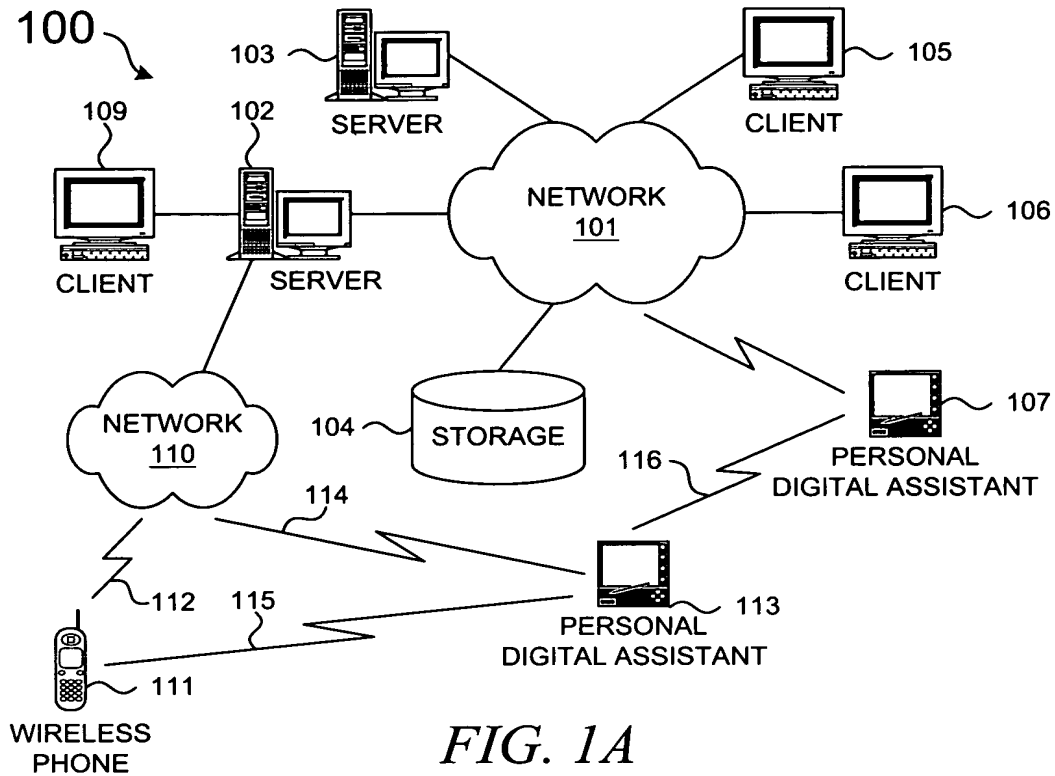


FIG. 1A  
(PRIOR ART)

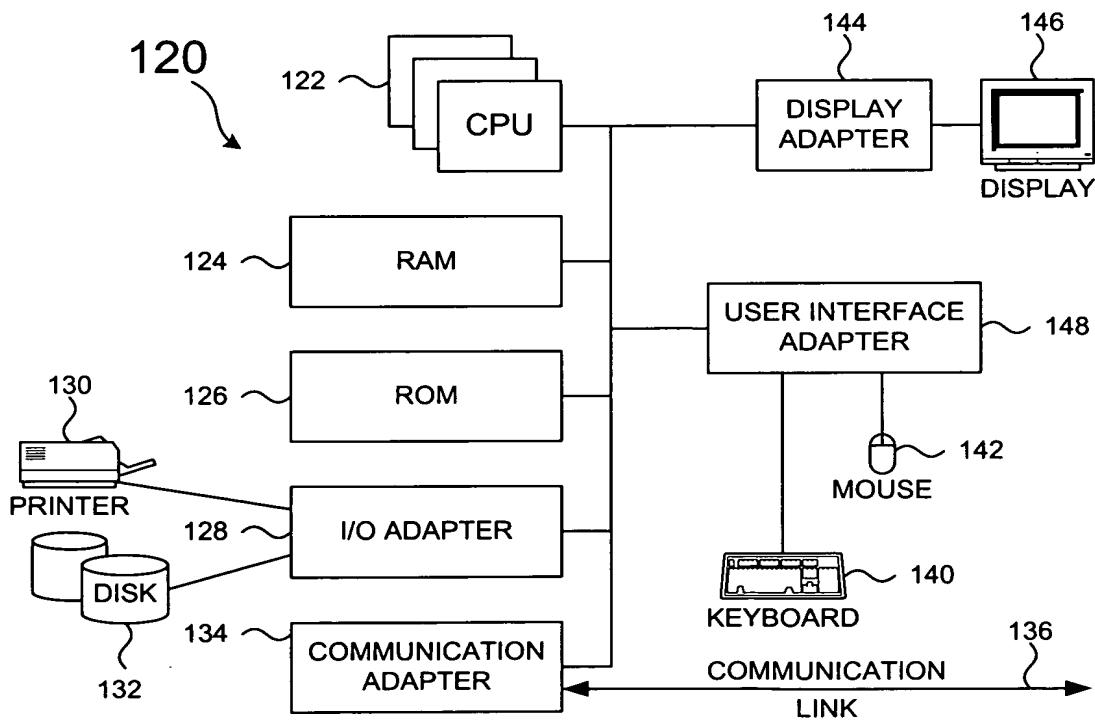


FIG. 1B  
(PRIOR ART)

FIG. 1A (PRIOR ART)

Method and system for managing a distributed trust path locator for public key certificates  
relating to the trust path of an X.509 attribute certificate

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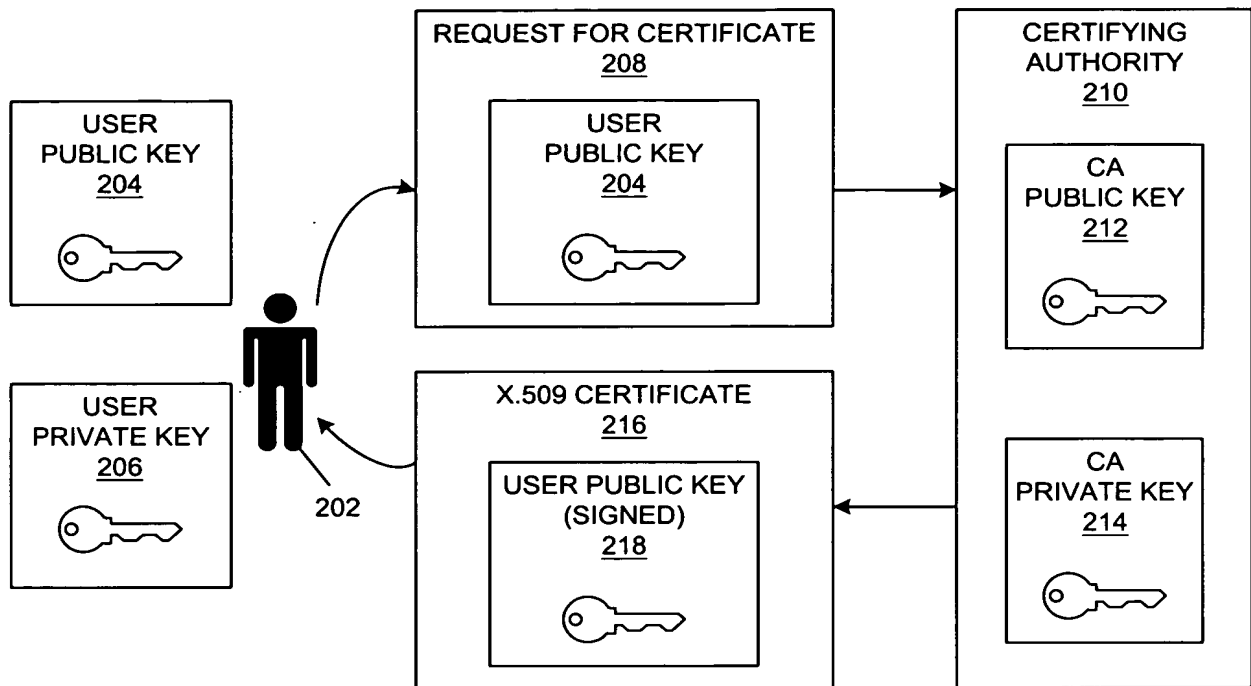


FIG. 2  
(PRIOR ART)

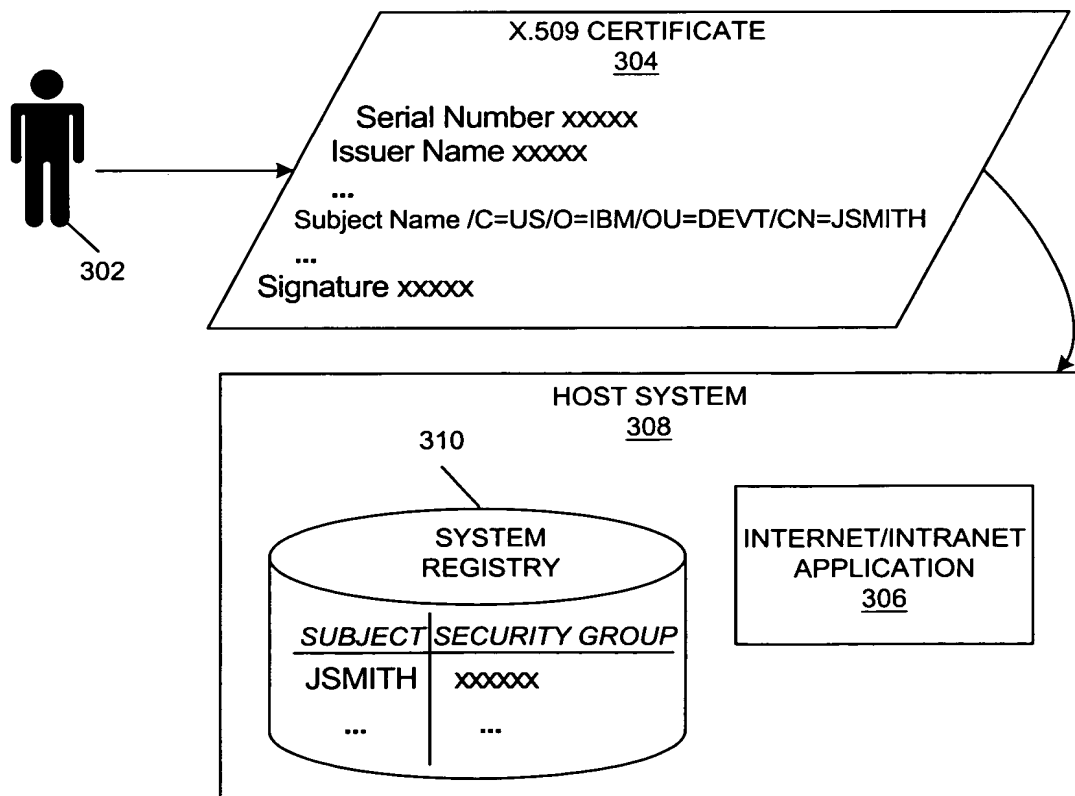
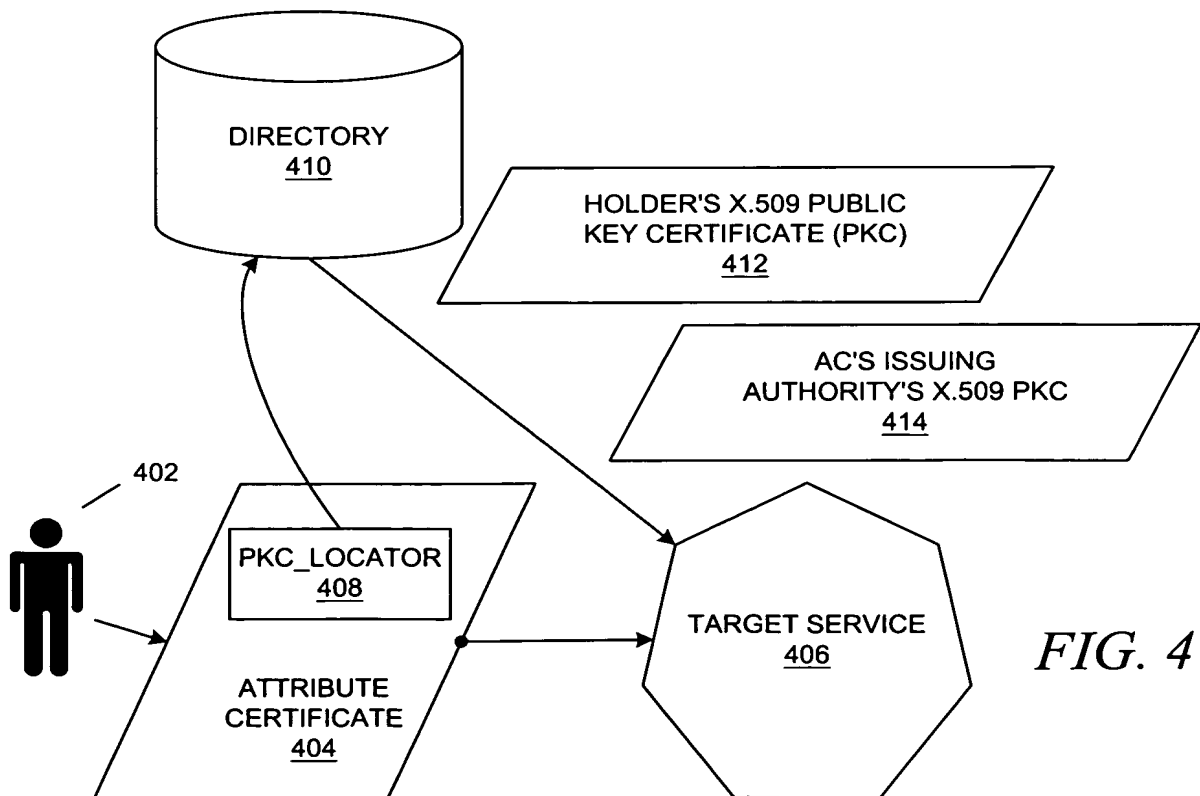
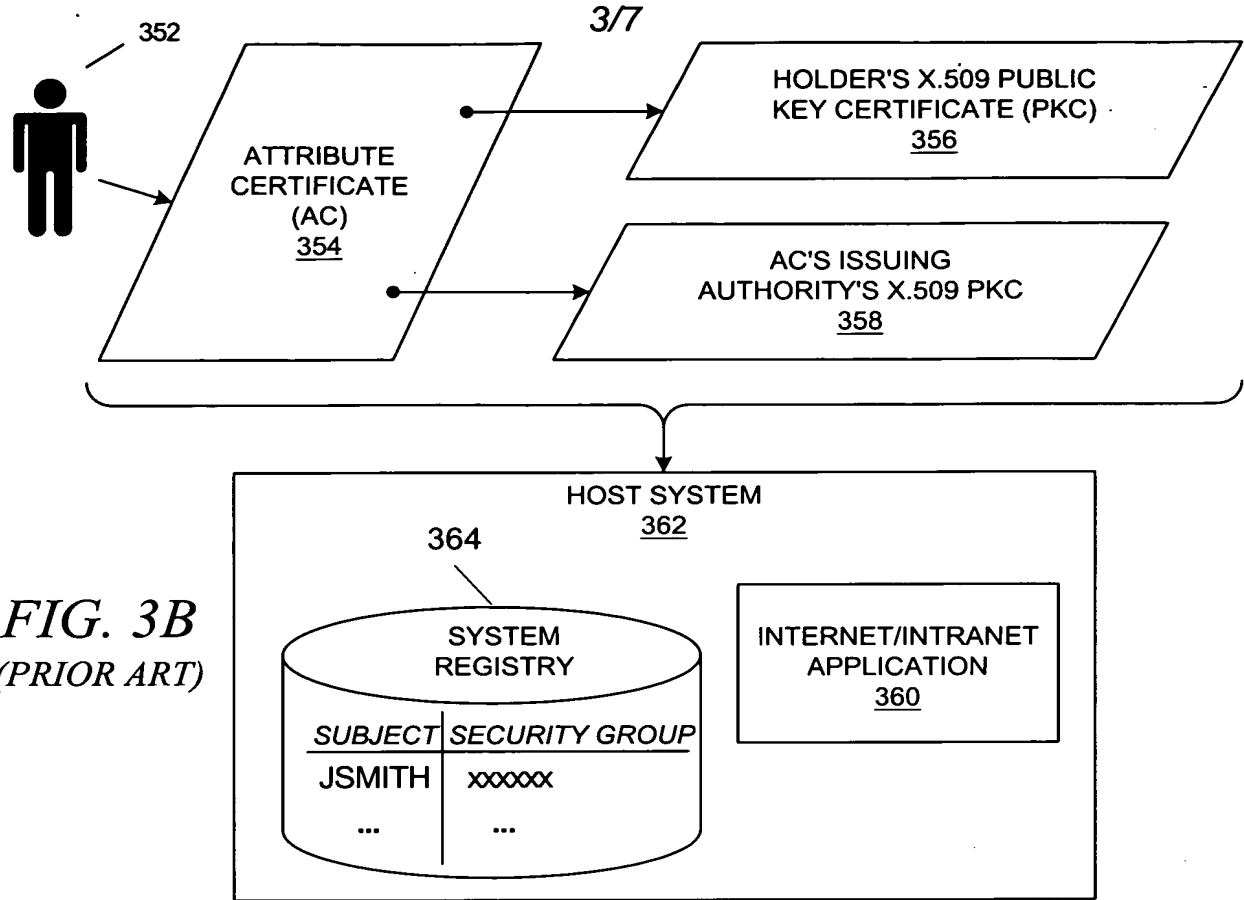


FIG. 3A  
(PRIOR ART)

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Method and system for managing a distributed trust path locator for public key certificates relating to the trust path of an X.509 attribute certificate



Method and system for managing a distributed trust path look for public key certificates  
relating to the trust path of an X.509 attribute certificate

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Certificate ::= SEQUENCE {  
     tbsCertificate           TBSertificate,  
     signatureAlgorithm      AlgorithmIdentifier,  
     signature                BIT STRING }

TBSertificate ::= SEQUENCE {  
     version                 [0] Version DEFAULT v1,  
     serialNumber            CertificateSerialNumber,  
     signature               AlgorithmIdentifier,  
     issuer                  Name,  
     validity                Validity,  
     subject                 Name,  
     subjectPublicKeyInfo    SubjectPublicKeyInfo,  
     issuerUniqueID         [1] IMPLICIT UniqueIdentifier OPTIONAL,  
     subjectUniqueID        [2] IMPLICIT UniqueIdentifier OPTIONAL,  
     extensions             [3] Extensions OPTIONAL }

Version ::= INTEGER { v1(0), v2(1), v3(2) }

CertificateSerialNumber ::= INTEGER

Validity ::= SEQUENCE {  
     notBefore               Time,  
     notAfter                Time }

Time ::= CHOICE {  
     utcTime                 UTCTime,  
     generalTime             GeneralizedTime }

UniqueIdentifier ::= BIT STRING

SubjectPublicKeyInfo ::= SEQUENCE {  
     algorithm               AlgorithmIdentifier,  
     subjectPublicKey        BIT STRING }

Extensions ::= SEQUENCE SIZE (1..MAX) OF Extension

Extension ::= SEQUENCE {  
     extnID                  OBJECT IDENTIFIER,  
     critical                BOOLEAN DEFAULT FALSE,  
     extnValue               OCTET STRING }

**FIG. 5A**  
(PRIOR ART)

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Method and system for managing a distributed trust path for public key certificates  
relating to the trust path of an X.509 attribute certificate

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AttributeCertificate ::= SEQUENCE {
    acinfo          AttributeCertificateInfo,
    signatureAlgorithm AlgorithmIdentifier,
    signatureValue   BIT STRING
}

AttributeCertificateInfo ::= SEQUENCE {
    version          AttCertVersion DEFAULT v1,
    holder           Holder,
    issuer           AttCertIssuer,
    signature        AlgorithmIdentifier,
    serialNumber     CertificateSerialNumber,
    attrCertValidityPeriod AttCertValidityPeriod,
    attributes       SEQUENCE OF Attribute,
    issuerUniqueID   UniqueIdentifier OPTIONAL,
    extensions       Extensions OPTIONAL
}

AttCertVersion ::= INTEGER { v1(0), v2(1) }

Holder ::= SEQUENCE {
    baseCertificateID [0] IssuerSerial OPTIONAL,
    -- the issuer and serial number of
    -- the holder's Public Key Certificate
    entityName        [1] GeneralNames OPTIONAL,
    -- the name of the claimant or role
    objectDigestInfo  [2] ObjectDigestInfo OPTIONAL
    -- if present, version must be v2
}

ObjectDigestInfo ::= SEQUENCE {
    digestedObjectType ENUMERATED {
        publicKey          (0),
        publicKeyCert      (1),
        otherObjectTypes   (2) },
    -- otherObjectTypes MUST NOT
    -- be used in this profile
    otherObjectTypeID    OBJECT IDENTIFIER OPTIONAL,
    digestAlgorithm       AlgorithmIdentifier,
    objectDigest          BIT STRING
}

```

**FIG. 5B**  
(PRIOR ART)

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Method and system for managing a distributed trust path lookup for public key certificates  
relating to the trust path of an X.509 attribute certificate

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AttCertIssuer ::= CHOICE {  
    v1Form GeneralNames, -- v1 or v2  
    v2Form [0] V2Form -- v2 only  
}

V2Form ::= SEQUENCE {  
    issuerName GeneralNames OPTIONAL,  
    baseCertificateID [0] IssuerSerial OPTIONAL,  
    objectDigestInfo [1] ObjectDigestInfo OPTIONAL  
    -- at least one of issuerName, baseCertificateID  
    -- or objectDigestInfo MUST be present}

IssuerSerial ::= SEQUENCE {  
    issuer GeneralNames,  
    serial CertificateSerialNumber,  
    issuerUID UniqueIdentifier OPTIONAL  
}

AttCertValidityPeriod ::= SEQUENCE {  
    notBeforeTime GeneralizedTime,  
    notAfterTime GeneralizedTime  
}

Attribute ::= SEQUENCE {  
    type AttributeType,  
    values SET OF AttributeValue  
    -- at least one value is required  
}

AttributeType ::= OBJECT IDENTIFIER

AttributeValue ::= ANY DEFINED BY AttributeType

*FIG. 5C*  
(PRIOR ART)

PKClocator ::= SEQUENCE {  
    holderPKClocator [0] GeneralNames OPTIONAL,  
    authorityPKClocator [1] GeneralNames OPTIONAL  
}

wherein GeneralNames is defined by IETF RFC2459 as

GeneralNames ::= SEQUENCE SIZE (1..MAX) OF GeneralName

GeneralName ::= CHOICE {  
    otherName [0] OtherName;  
    rfc822Name [1] IA5String,  
    dNSName [2] IA5String,  
    x400Address [3] ORAddress,  
    directoryName [4] Name,  
    ediPartyName [5] EDIPartyName,  
    uniformResourceIdentifier [6] IA5String,  
    iPAddress [7] OCTET STRING,  
    registeredID [8] OBJECT IDENTIFIER  
}

*FIG. 6*

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Method and system for managing a distributed trust path locator for public key certificates  
relating to the trust path of an X.509 attribute certificate

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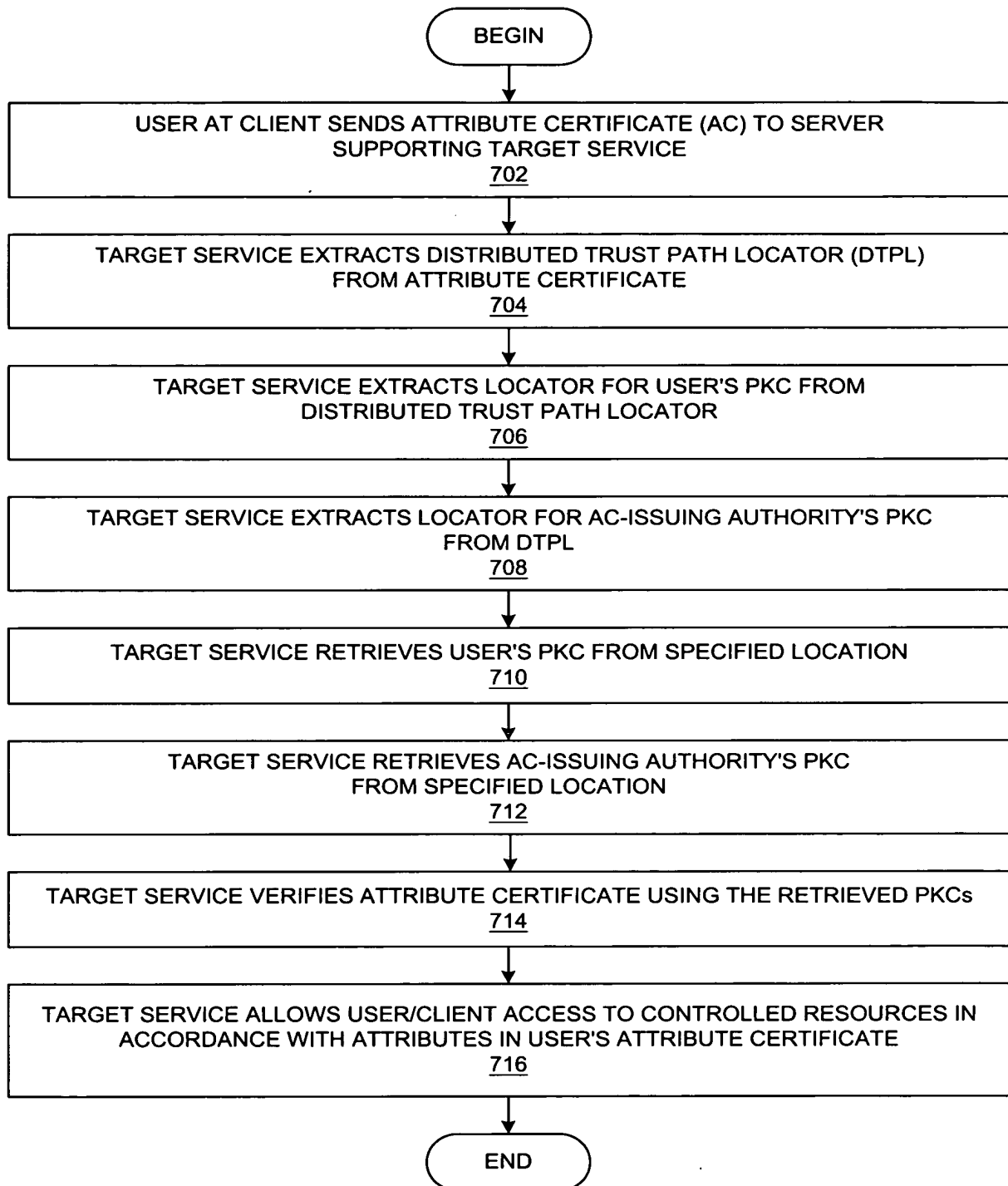


FIG. 7